# Alloy C-22
# Welding Wire and Rods

U.S. ALLOY CO.
dba Washington Alloy
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Charlotte, NC 28216
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WA. ALLOY CO.

Quality Management System
in accordance with
*ISO 9001*
*Cert # 05-R0925*

American Welding Society
Sustaining Company Member

GAWDA
GASES AND WELDING DISTRIBUTORS ASSOCIATION

Washington Alloy C22® is a nickel chromium molybdenum alloy wire designed for joining Hastelloy® C22®, 625, 825 or combinations of these alloys, or other Ni-Cr-Mo alloys to themselves or to stainless steels. Washington Alloy C22® is equivalent to Hastelly® C22® and is also used extensively for overlays and cladding of lower alloy steels. Washington Alloy C22® weld deposits offer better overall resistance to weld metal corrosion than most other Ni-Cr-Mo alloys such as C276, C4 and 625. Washington Alloy C22® has outstanding resistance to pitting, crevice corrosion and stress-corrosion cracking. This alloy is used in chemical processing application involving ferric and cupric and inorganic, chlorine formic and acetic acids, acetic anhydride, sea water, and brine solutions.

**TYPICAL GMAW WELDING PROCEDURES;** DCEP Spray Arc

| Wire Diameter | Wire Speed (ipm) | Amps | Volts | Electrical Stick-out | Argon (cfh) |
|---|---|---|---|---|---|
| 0.030 | 550-750 | 175-250 | 26-32 | 3/8-1/2” | 30-40 |
| 0.035 | 425-575 | 175-300 | 26-32 | 3/8-1/2” | 30-40 |
| 0.045 | 250-350 | 200-310 | 26-32 | 3/8-1/2” | 35-50 |
| 0.062 | 125-200 | 250-330 | 27-33 | 1/2"-5/8” | 35-50 |

**TYPICAL GMAW WELDING PROCEDURES;** DCEP Short Circuit

| Wire Diameter | Wire Speed (ipm) | Amps | Volts | Electrical Stick-out | (cfh) 75Ar/25He |
|---|---|---|---|---|---|
| 0.035 | 150-200 | 90-110 | 19-21 | 3/8-1/2” | 35-45 |
| 0.045 | 175-225 | 100-140 | 22-24 | 3/8-1/2” | 40-50 |

**TYPICAL GTAW WELDING PROCEDURES;** DCEN with EWTh-2 truncated conical tip

| Filler Wire Size | Tungsten | Amps | Volts | Gas Cup Size | Argon (cfh) | Base thickness |
|---|---|---|---|---|---|---|
| 1/16” | 1/16” | 80-150 | 12 | 1/2” | 20 | 1/16-1/8” |
| 3/32” | 3/32” | 150-250 | 12 | 3/4” | 25 | 1/8- 3/16” |
| 1/8” | 1/8” | 200-375 | 12 | 5/8” | 30 | 1/4-1/2” |

Procedures may vary with change in position, base metals, filler metals, equipment and other changes.

**AWS CHEMISTRY REQUIREMENTS (%) & TYPICAL WELD METAL STRENGTHS;**

| | | | |
|---|---|---|---|
| Carbon | 0.015 max | Tensile Strength (psi) | 115,000 |
| Manganese | 0.50 max | Yield Strength (psi) | 77,000 |
| Iron | 2.0-6.0 | Elongation | 47% |
| Phosphorus | 0.02 max | | |
| Sulphur | 0.010 max | | |
| Silicon | 0.08 max | Molybdenum | 12.5-14.5 |
| Copper | 0.50 max | Cobalt | 2.50 max |
| Nickel + Co | Balance | Chromium | 20.0-22.5 |
| Vanadium | 0.35 max | Tungsten | 2.5-3.5 |

**AVAILABLE SIZES**: TN C22 = Spools of 035, 045, 1/16,
TN C22/ = Cut lengths of 035, 045, 1/16, 3/32, 1/8, 5/32
Other sizes available – please inquire

**SPECIFICATIONS;** **ANSI/AWS** A5.14 ERNiCrMo-10
**ASME** SFA5.14 ERNiCrMo-10 F-43

WA. ALLOY CO.

DC 2020

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